Children's Detection of Sign Language Iconicity

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Introduction

Evidence suggests that some signs across different sign-languages are iconic. It may be possible for non-signers to comprehend the meaning of the sign (Strickland et al. 2015).

Telic verbs denote an event with an inherent endpoint (e.g., sell) and are typically signed with an abrupt endpoint as well.

Atelic verbs denote an event without an inherent endpoint (e.g., run) and are typically signed with repetition.

Recent research from Strickland et al. (2015) notes that adult non-signers were able to interpret telicity within these signs.

The current study investigates whether children can also detect telicity in 12 signed verbs in Italian Sign Language (LIS). Children are tested because their cognitive abilities do not match those of adults. If children succeed, it will provide evidence that iconicity exists within sign languages.

Panasevich and Tsitseroshin (2015) argue that 5 to 6 year old boys and girls use varying cognitive strategies when performing on intelligence tests, meaning that gender differences may exist when performing cognitive tasks.

Experimental Questions

1) Do children succeed at finding iconicity with both telic and atelic signs?

2) Are atelic signs easier to detect than telic signs?

3) Does gender affect accuracy?

Method

PARTICIPANTS: 24 5-year-old children (M=5.5); 11 female and 13 male

PROCEDURE: Children are shown 12 LIS signs, one at a time. Two written choices in English are provided per video. They are told to watch the sign and then choose the answer that matched the sign. One English choice was the correct translation and matched in telicity. The other choice was incorrect and differed in telicity.

Stimuli

Stimuli came from three conceptual domains: psychological verbs (ex., "decide" and "think"), physical verbs (ex., "leave" and "run"), and social verbs (ex., "sell" and "negotiate"). Videos were taken from Strickland et al. (2015).

Videos were created by a native Italian signer for 6 telic verbs and 6 atelic verbs and were counterbalanced in order to eliminate any confounding variables

Average length for telic signs: 1.03 seconds

Average length for atelic signs: 1.69 seconds

Sample trial (telic):

Decide **Imagine**

Sample trial (atelic):

Decide **Think**

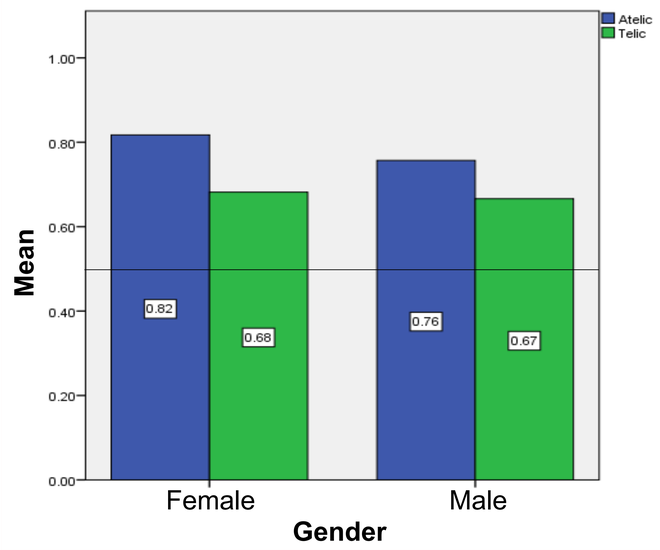
Results

Children succeeded at finding iconicity within telic $t(23)=3.08$, $p<.005$ and atelic $t(23)=9.29$, $p < .001$ verbs.

Atelic signs were simpler to detect compared to telic verbs, $t(23)=2.08$, $p = .049$

Boys and girls performed equally on this task (n.s.).

Proportion Correct



Discussion

Children succeeded at finding iconicity with both telic and atelic signs while watching LIS videos. This serves as evidence that even children can detect iconicity in sign-language.

Atelic signs are significantly easier to detect atelic signs compared to telic ones. This potentially shows that iconicity may not exist within sign languages due to the varying video lengths by telicity.

Gender did not affect accuracy.

References

Panasevich, E. A., & Tsitseroshin, M. N. (2015). The ability to successfully perform different kinds of cognitive activity is reflected in the topological features of intercortical interactions: Sex-related differences between boys and girls aged five to six years. *Human Physiology*, *41*(5), 487-502. doi:10.1134/S0362119715050114

Strickland, B., Geraci, C., Chemla, E., Schlenker, P., Kelepir, M., & Pfau, R. (2015, April 27). Event representations constrain the structure of language: Sign language as a window into universally accessible linguistic biases. *Proceedings of the National Academy of Sciences Proc Natl Acad Sci USA, 112*(19), 5968-5973. doi:10.1073/ pnas. 1423080112

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